CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION

ORDER 97-095

AMENDMENT OF SITE CLEANUP REQUIREMENTS (ORDER NO. 92-022) FOR:

RHONE-POULENC INC.

UPLAND OPERABLE UNIT 1990 BAY ROAD SITE EAST PALO ALTO SAN MATEO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

- 1.0 Site Location and Description: Soil and ground water pollution exist on a Site in and adjacent to 1990 Bay Road, East Palo Alto (Figure 1). The Site is located about 2000 feet west of San Francisco Bay and about 4500 feet northwest of San Francisquito Creek, a tributary of the bay. Tidal and non-tidal marshes border the Site on the east and southeast. Non-tidal marshes are bounded by levees with a portion constructed before 1939 and another portion by 1955.
- 2.0 Manufacturing Facility History and Pollution: From 1926 to 1971, the manufacturing facility located at 1990 Bay Road was used for the production and formulation of sodium arsenite-based herbicides and pesticides. The sodium arsenite was formulated in an underground tank located on the premises. Some of the wastes from this process were disposed of in a shallow sludge pond located on the northwest portion of the facility. These and other practices related to this operation resulted in releases of arsenic and other metals, impacting soil and groundwater on and adjacent to the facility.
- Operable Unit Designations: The "Site" is defined to include areas affected by releases from the manufacturing facility at 1990 Bay Road containing arsenic concentrations in soil greater than 20 mg/kg. The total Site area lying within the 20 mg/kg contour covers approximately 15 to 20 acres. For purposes of remedy selection and remedial planning, the Site was divided into "Upland" and "Wetland" "Operable Units" (OU) within the meaning of section 300.430(a)(ii) of the National Contingency Plan (NCP), 40 C.F.R. Part 300 (Figure 2). In 1994 the Board amended the boundary

of the Upland OU to include the Torres and Pacific Gas & Electric (PG&E) properties. This portion is referred to as the Upland OU Annex (Figure 3). This Order expands the Upland OU Annex to include affected properties south of Weeks Street as defined below. The affected properties south of Weeks Street, with the exception of the drainage canal owned by the City of Palo Alto which flows south from the end of Runnymede Street, are hereinafter referred to as the South of Weeks Street Upland Operable Unit Annex Subarea (SOW Subarea) (Figure 4). The affected area in the drainage canal, owned by the City of Palo Alto, will be included as part of the Wetland OU of the Site.

- Named Dischargers: Rhone-Poulenc Inc. (RPI) is the successor in interest to Chipman Chemical and Rhodia, which from 1926 to 1971 were known to have produced arsenic-based pesticides at the 1990 Bay Road facility and is the probable source of some of the pollutants found in soil and groundwater, both at 1990 Bay Road and on adjacent properties. RPI is a discharger because it is the successor in interest of Chipman and Rhodia and is responsible for any discharges which they may have caused.
- Regulatory Status: In 1985, the U.S. Environmental Protection Agency (EPA) 4.0 proposed the Site for inclusion on the National Priorities List (NPL) under authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as later amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986. From 1987 to early 1991, the Site was under the lead agency jurisdiction of the Department of Toxic Substance Control (DTSC) pursuant to a Consent Order. In 1989, EPA formally removed the Site from consideration for the NPL under EPA's Resource Conservation and Recovery Act (RCRA) deferral policy. Lead agency status changed in January 1991, from DTSC to the Regional Board. The Regional Board is currently the lead agency overseeing investigation and cleanup of the Site. The Board has continued to regulate the Site consistent with the National Contingency Plan (NCP) under the South Bay Multiple Site Cooperative Agreement (MSCA) with EPA. The MSCA terminated in July 1996. EPA has informed the Board that the federal program most appropriate to the Site would be the RCRA Corrective Action program, in light of the status of the Site as a RCRA deferral site. This Order is intended to meet the requirements of RCRA Corrective Action and the California Water Code as well as Board policies and procedures for Orders issued under the authority of Water Code Section 13304. The Board will continue to be the lead agency and will regulate the Site as it has in the past.
- 5.0 Regional Board Orders: The following Board Orders have been adopted by the Board for the Site:
 - Cleanup and Abatement Order (CAO) 82-001, adopted April 15, 1982 (requiring investigation and abatement of the vertical and lateral extent of soil,

surface and groundwater pollution);

- Cleanup and Abatement Order 82-002, adopted April 21, 1982 (allowing additional time for completion of tasks);
- Cleanup and Abatement Order 82-005, adopted October 13, 1982 (allowing additional time for completion of tasks);
- Cleanup and Abatement Order 83-012 adopted December 20, 1983 (allowing additional time for completion of tasks);
- Waste Discharge Requirements Order 85-67, adopted May 15, 1985 (rescinding Orders 82-001, 82-002, 82-005 and 83-012, requiring the dischargers to conduct further site characterization, construct monitoring well systems in the shallow and deep aquifers, and submit results of groundwater sample analyses);
- Administrative Civil Liability Complaint 87-001;
- Site Cleanup Requirements Order No. 91-016, adopted February 20, 1991 (rescinding and replacing Order 85-67 to reflect change in lead agency, to include tasks necessary to complete the Feasibility Study/Remedial Action Plan (FS/RAP) process, to update groundwater monitoring and to ensure design of an adequate groundwater mitigation response for final site cleanup);
- Site Cleanup Requirements Order No. 91-095 adopted June 19, 1991 (amending Order No. 91-016 to add provisions for implementing an Early Action Removal Plan (EARP));
- Site Cleanup Requirements Order No. 92-022 adopted February 22, 1992, (containing the Remedial Action Plan for the Upland Operable Unit);
- Site Cleanup Requirements Order No. 92-127 adopted October 21, 1992 (amending Order Nos. 92-022, 91-095 and 91-016, to revise and consolidate tasks and due dates);
- Site Cleanup Requirements Order No. 94-042 adopted March 16, 1994 (amending Order Nos. 92-127, 92-022, 91-095 and 91-016, extending the Upland Operable Unit remedy into the Upland Operable Unit Annex area);
- Site Cleanup Requirements Order No. 96-162 adopted December 18, 1996, (amending Order 94-042, 92-127, 92-022, 91-095 and 91-016, removing Sandoz Crop Protection Corporation from Site Cleanup Requirements); and,

- Cleanup and Abatement Order No. 97-015 issued March 26, 1997, (names Torres as a discharger and sets forth time schedule for completion of remedial action on Torres property).
- 6.0 Upland OU Remedial Action Plan/Record of Decision: A Remedial Action Plan (RAP) was adopted by the Board and the U.S. Environmental Protection Agency issued a Record of Decision (ROD) in 1992 for the Upland OU. The selected remedy, in 1992, for the Upland OU consists of the following measures:
 - Remove accessible soils containing concentrations greater than 5000 mg/kg arsenic from accessible areas on the Sandoz property (see figure 3). (This work was completed under Board Order No. 91-095.) Excavated soil has been disposed of offsite at a Class I facility in accordance with state and federal land disposal regulations. Inaccessible soil currently located under the areas required for support of facility operations will be removed when the facility ceases operation and the structures are razed. Land Disposal restriction rules may require soil treatment prior to disposal;
 - Treat soils containing concentrations of 500 mg/kg or greater of arsenic by means of fixation technology, in order to reduce the mobility of contaminants. The treatability goal is 5 mg/l arsenic, 1 mg/l cadmium, 5 mg/l lead, .02 mg/l mercury, and 1 mg/l selenium as measured by the TCLP (This work has been completed for the Upland OU and Annex areas);
 - Record deed restrictions for properties where soil with greater than 70 mg/kg is left in-place., in conformance with Health and Safety Code Chapter 6.5, Article 11, § 25220-41, as modified by the Board in consultation with DTSC;
 - Remove soil containing arsenic concentrations above health-based criteria (70 mg/kg) from any properties which will not be deed restricted, and dispose at an appropriate facility in accordance with state and federal land disposal regulations (This work has been completed for the Upland OU, as originally established);
 - Pave areas that contain surface soil for which data measures arsenic concentrations greater than 70 mg/kg, after grading to control ponding and maintain surface water drainage to the southeast (This work has been completed for the Upland OU, as originally established);
 - Monitor arsenic concentrations in shallow and deep aquifers as provided by the approved Deep Aquifer Monitoring Plan (DAMP) (This work is ongoing);

- Install additional monitoring wells and continue the groundwater monitoring program for the Site, as set forth in the DAMP, the revised Sampling and Analysis Plan (SAP), and the Aquifer Characterization and Contingency Plan (ACCP). After the implementation of the FS/RAP for the Wetland OU, install a slurry wall to prevent outward migration of arsenic concentrations exceeding 0.05 mg/l in shallow groundwater zone (pursuant to Order 92-022, the date for slurry wall implementation shall be specified in the Wetland FS); and
- Intermittently dewater within the slurry wall as necessary to maintain an inward hydraulic gradient; treat extracted groundwater as necessary; and discharge treated water to storm drain under an NPDES permit (Pursuant to Order 92-022, the date for slurry wall dewatering and treatment and discharge of extracted groundwater shall be specified in the Wetland FS).
- New Discovery of Additional Pollution: Redwood Mortgage Investors V, VI, & VII, 7.0 (Redwood) are the current owners of the 1200 Weeks Street properties and have proposed the development of a single-family detached home subdivision on the properties (note: the City of East Palo Alto Planning Commission has postponed consideration of the negative declaration for the proposed development, pending adoption of an Order from the Board requiring remediation). These properties are located on the southern side of Weeks Street just south of the previously defined boundary of the Site. In response to this proposed development RPI requested permission from Redwood to conduct soil sampling activities to confirm whether or not pollutants from the Site had migrated south onto the 1200 Weeks Street properties. Analytical data from soil samples collected on the 1200 Weeks Street properties indicate the presence of arsenic at elevated concentrations on the eastern most portion of the properties. RPI conducted additional sampling on and south of the 1200 Weeks Street properties in order to fully define the lateral extent of soil pollution. These investigations have detected elevated concentrations (>20 mg/kg) of arsenic in soil on the following properties: 1275 Runnymede Street; a portion of the 1200 Weeks Street properties (parcel 063-271-040); in the drainage ditch adjacent on the school property at the south east end of Runnymede; and, the drainage canal belonging to Palo Alto which flows south from Runnymede (note: the drainage canal belonging to Palo Alto will be included as part of the Wetland OU and will not be covered by this Order).

The investigation in the SOW Subarea detected concentrations of arsenic in soil which exceed the residential cleanup standard of 70 mg/kg specified in the 1992 Upland OU Remedial Action Plan (RAP) as set forth in Board Order No. 92-022. No arsenic concentrations which exceeded the industrial cleanup standard of 500 mg/kg, also set forth in the 1992 RAP, have been detected south of Weeks Street. Groundwater has also been impacted in this area. Based on the results of an additional investigation currently in progress, the Board may consider amendment or revision to this Order.

- Basis for Annexing the South of Weeks Street Properties into the Upland Operable
 Unit: Based on the results of the investigations south of Weeks Street it appears that
 the nature and extent of soil pollution is very similar to that within the Upland OU
 and Annex areas. In this case it would be appropriate to apply the described remedial
 technologies and techniques for the Upland OU to the south of Weeks Street
 properties. This remedy has been proven to be implementable and protective of both
 human health and the environment. This action will allow for remediation of the
 South of Weeks Street properties in an expeditious manner.
- Residential Soil Cleanup Standard for SOW Subarea: The current and proposed future uses as well as zoning for much of the SOW Subarea is residential or institutional. Properties located south and west of the SOW Subarea are also residential. A school is located on the south side of Runnymede Street. Because of the zoning of the affected and adjacent properties, their current or probable future use for residential purposes and a school, a residential cleanup standard is most appropriate for the Subarea properties. The appropriate residential health-based goal (HBG) for the SOW Subarea is 20 mg/kg arsenic in soil. This HBG is based on an evaluation conducted in 1991 and documented in a technical memorandum titled "Derivation of Health-Based Goals for Arsenic in Soil", dated August 27, 1991 (prepared for U.S. EPA by its contractor PRC Environmental Management, Inc). In the 1991 technical memorandum, HBGs were calculated for several scenarios including a current commercial/industrial scenario and a future on-site residential scenario.

The HBGs in the 1991 memorandum were based on the residential scenario. The most protective HBGs ranged from 20 mg/kg to 70 mg/kg depending on exposure pathways. The original HBG selected for the 1990 Bay Road Site was 70 mg/kg based on potential cancer effects, and it used a residential scenario that included exposure pathways for ingestion of soil and inhalation of fugitive dust. Initially this HBG (70 mg/kg) was selected because the area of known arsenic impact was within industrial-zoned properties and the likelihood of residential use was small. However, in late 1995, the extent of arsenic releases from the 1990 Bay Road Site were found to extend into residentially-zoned and used properties south of Weeks Street. Given this consideration, it is appropriate to apply the more protective HBG of 20 mg/kg for arsenic at the properties included in this Order. The 20 mg/kg HBG is based on residential exposure pathways that include ingestion of soil, inhalation of fugitive dust, and consumption of homegrown produce, and is based on potential cancer effects. This Order modifies the residential cleanup standard from 70 mg/kg arsenic in soil to 20 mg/kg for the SOW Subarea.

- 10. Proposed Remedial Action Plans: There have been remedial action plans proposed for two affected properties in the SOW Subarea.
 - a. 1200 Weeks Street Properties: Redwood, the owner of the 1200 Weeks Street properties, in an effort to expedite remediation of its properties and begin

development, submitted a proposed Remedial Action Plan to the Board dated October 8, 1996. The Remedial Action Plan, prepared on Redwood's behalf by Golder Associates, Inc., proposes removal of soil in accessible areas to 20 mg/kg. Soil exceeding 20 mg/kg will be removed with the exception of inaccessible soil under the levee and sanitary sewer line located on the eastern portion of the property. Board staff have reviewed this report and in a letter dated October 22, 1996, conditionally approved the document.

- b. 1275 Runnymede Street Property: RPI has prepared and submitted to the Board a draft Remedial Plan dated January 31, 1997 for the 1275 Runnymede Street property. This plan has been designed specifically for this property, taking into account the structures present and the desires of the owner to minimize disruption. In this case a combination of soil removal and capping have been proposed for soil containing greater than 22 mg/kg arsenic. The proposed cleanup standard of 22 mg/kg arsenic is based on the U.S. EPA, Region IX's, Preliminary Remediation Goal for non-carcinogenic effects in a residential exposure scenario. In addition, a deed restriction would also be required for the property to ensure that the remedy remains protective. The Board does not find the proposed cleanup standard of 22 mg/kg acceptable, nor does the Board find the draft Remedial Plan acceptable as a final remedy for the property. A cleanup standard of 20 mg/kg of arsenic must be used. The draft Remediation Plan along with a risk management plan and deed restriction will then suffice as an interim measure until such time as the property become accessible and final measures could be implemented. Should land use change in the future, the discharger may propose to the Board that this interim remedy be considered as the final remedy for the property.
- 11. Scope of this Order: This Order modifies the boundaries of the Upland OU as described in SCR Order 92-022 to include the affected properties south of Weeks Street as an Upland OU Subarea, extending the remedy into this Subarea. The Order also revises the residential soil cleanup standard for arsenic set forth in SCR 92-022 from 70 mg/kg to 20 mg/kg. Additionally, the Order requires the discharger to submit the results of a groundwater investigation for the SOW Subarea. Furthermore, the Order sets forth a task and time schedule to apply the remedy to the SOW Subarea.
- 12. Administrative Record: This Order will become part of the administrative record file. Copies of the administrative record are located at the Regional Board offices, 2101 Webster Street, Suite 500, Oakland, California 94612. Additional copies of portions of the administrative record is located in the East Palo Alto Public Library, 2415 University Avenue, East Palo Alto, California 94303. In addition, a notice of availability and brief description of this Order will be published in a local newspaper of general circulation.

- 13. Community Relations Activities: Community relations activities conducted in conjunction with this Order include the following:
 - Briefing local officials about the inclusion of the SOW Subarea into the Upland OU;
 - Hold a community meeting to discuss the inclusion of the SOW Subarea into the Upland OU;
 - Publish notices in two local newspapers announcing the inclusion of the SOW Subarea into the Upland OU; and,
 - Placing a copy of this Order and technical reports for the SOW Subarea into the local information repository located in the East Palo Alto public library.
- 14. Lead Agency: The Board has been acting as the lead agency pursuant to a stipulation between RPI, the DTSC, and the Board dated February 1991, vacating the August 1987 Consent Order for the Site, and to various interagency agreements. Pursuant to the South Bay Multi-Site Cooperative Agreement and the South Bay Ground Water Contamination Enforcement Agreement, entered into on May 2, 1985 (as subsequently amended) by the Board, EPA and DTSC, the Board has been acted as the lead agency for the Site. The MSCA terminated in July 1996. The Board will continue as lead agency to regulate the dischargers' remediation and administer enforcement actions in accordance with applicable state and federal authorities.
- 15. Cost Recovery: The discharger has been advised that the Regional Board may enter into cost recovery pursuant to Section 13304 of the California Water Code. This would entitle the Board to seek reimbursement for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of wastes and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order.
- 16. CEQA: This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the California Environmental Quality Act, Cal. Pub. Res. Code §§ 21000 et seq., pursuant to section 15321 of the Guidelines, Title 14, California Code of Regulations.
- 17. Notification: The Board has notified the discharger and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations. The Board has consulted with DTSC to ensure that the cleanup activities required by this Order are consistent with RCRA.

Public Hearing: The Board, in a public meeting, heard and considered all comments pertaining to the RAP and its extension to the SOW Subarea. The EPA and the DTSC and other appropriate agencies have been consulted regarding the requirements of this Order. The DTSC has agreed not to take any action without prior consultation with the Board, unless immediate action is necessary to protect human health or the environment; if an emergency precludes consultation prior to implementation of any action, consultation shall take place as soon as circumstances allow. The Board has consulted the National Oceanic and Atmospheric Administration, the U.S. Fish & Wildlife Service, the U.S. Army Corps of Engineers, the Bay Area Air Quality Management District, the California Fish & Game Department, the San Francisco Bay Conservation and Development Commission, the County of San Mateo and the City of East Palo Alto prior to issuing this Order. The Board shall seek timely comments on all reports and actions relevant to this Order from these and all other interested federal and state agencies, and shall consider those comments.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that Board Order 92-022 is amended as follows:

A. Finding 1.2 is amended increasing the size of the Upland OU to approximately 20 acres and by the addition of the SOW Subarea as an Upland OU Subarea. The following paragraph is added to Finding 1.2:

South of Weeks Street Upland OU Annex Subarea (SOW Subarea) This designation includes all properties contaminated with arsenic originating from the 1990 Bay Road facility at concentrations greater than or equal to 20 mg/kg in soil located to the south of Weeks Street, with the exception of the drainage canal owned by the City of Palo Alto which flows south from the end of Runnymede Street. These properties as currently identified include: the 1275 Runnymede Street; parcel 063-271-040 of the 1200 Weeks Street properties; and, the drainage ditch on the school property at the southeast end of Runnymede Street.

B. Finding 9.5 is amended to read as follows:

Deed restrictions will be placed on properties where soil containing arsenic concentrations greater that 70 mg/kg (20 mg/kg for the SOW Subarea) remain. The deed restrictions will be similar to those on Superfund sites under Board lead, and in most cases (with the exception of the 1275 Runnymede St. property), will restrict all residential uses, use of shallow groundwater and

disturbance through the protective cap as through excavation. For the 1275 Runnymede Street property, where remediation of inaccessible areas will be deferred until structures are razed, residential uses will be permitted to remain if appropriate measures are implemented to mitigate risk. Additional studies under Provision C.1.d. will be conducted in determining which properties will require deed restrictions.

C. The following Cleanup Specification is added as Specification B.6.:

The residential cleanup standard for soil is 20 mg/kg arsenic within the SOW Subarea. With respect to the SOW Subarea, this standard replaces the 70 mg/kg arsenic residential cleanup standard wherever it appears in Order 92-022. For inaccessible and for non-residential areas (roads, etc.) in the SOW Subarea, capping to the residential cleanup standard, deed restrictions and a site management plan may be an appropriate remedy. However, the discharger may only propose such a remedy if it has obtained in advance the written consent of the affected property owner to deed restrict their property and apply a site management plan. In this case all areas containing greater than the residential cleanup standard of 20 mg/kg arsenic in soil must be capped, deed restricted and a site management plan imposed. Should the discharger not obtain or the property owner refuse to allow deed restrictions to be placed on their property within accessible areas, soil removal to the residential cleanup standard must occur.

- D. Provision C.1. is amended by the addition of the following tasks and time schedules as they apply to the SOW Subarea:
 - j. SUBMIT RESULTS OF GROUNDWATER QUALITY INVESTIGATION FOR THE SOUTH OF WEEKS STREET OPERABLE UNIT ANNEX AREA

DUE DATE: September 1, 1997

<u>Description</u>: The dischargers shall submit a technical report acceptable to the Executive Officer, containing the results of a groundwater quality investigation for the South of Weeks Street Upland OU Annex area.

k. REMEDIAL DESIGN/REMEDIAL ACTION REPORT ADDENDUM FOR SOIL

DUE DATE: September 1, 1997

Description: The discharger shall submit a technical report acceptable to the Executive Officer, containing the remedial design and remedial actions proposed for soil for each of the affected areas in the SOW Subarea. For all accessible residential areas, the report shall propose removal of all soil containing greater than 20 mg/kg arsenic. For all residential and non-residential inaccessible areas, the report may propose managing soil containing greater than 20 mg/kg arsenic in-place (note: In residential areas this will be considered as an interim measure). For non-residential accessible areas (roads, etc.) in the SOW Subarea, the discharger may propose managing soil containing greater than 20 mg/kg arsenic in-place. For all areas in the SOW Subarea where the discharger proposes management of soil containing arsenic concentrations greater than 20 mg/kg in-place, a cap, deed restriction and site management plan must be imposed. However, the discharger may only propose such a remedy if it has obtained in advance the consent of the affected property owner to deed restrict their property and apply a site management plan. In this case, both the proposed deed restriction and site management plan, which have been approved by the property owner, shall be included as part of this report submittal (note: the proposed deed restriction shall have the signature of the property owner as proof of their consent). Should the discharger not obtain or the property owner refuse to allow deed restrictions to be placed on their property within accessible areas, the report shall call for removal of affected accessible soil exceeding the residential cleanup standard. Additionally, for soil managed in-place the discharger must demonstrate that water quality will not be adversely impacted. Furthermore, a schedule to complete remedial actions by December 1, 1997, shall be included. Should the currently inaccessible areas become accessible in the future, the discharger shall promptly propose final remedial measures for such areas consistent with Order 92-022 and this Order.

1. IMPLEMENT SITE MANAGEMENT PLANS

DUE DATE: No later than February 1, 1998

<u>Description</u>: If proposed as a component of Task (k) above and accepted by the Executive Officer, the discharger shall implement the site management plan submitted.

m. RECORD DEED RESTRICTIONS

DUE DATE: No later than February 1, 1998

<u>Description</u>: If proposed as a component of Task (k) above and accepted by the Executive Officer, the discharger shall obtain from the property owner(s) a properly executed and recorded deed restriction as approved. Copies of the recorded restrictions will be submitted to the Board.

n. IMPLEMENTATION REPORT FOR SOUTH OF WEEKS STREET UPLAND OPERABLE UNIT ANNEX REMEDIATION

DUE DATE: March 1, 1998.

<u>Description</u>: The discharger shall submit a technical report acceptable to the Executive Officer documenting completion of the tasks identified in the technical report submitted for Task (k).

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on July 16, 1997.

Loretta K. Barsamian Executive Officer







